

REMARKS

Applicants have carefully reviewed the Office Action dated September 26, 2003. Applicants have amended Claims 5, 7, 8, 9, 11, 12, 18, 21, 22, to more clearly point out the present inventive concept. Claims 1-4 have been canceled. Reconsideration and favorable action is respectfully requested.

Claims 5-13, 15-23 and 25-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Barry et al.* and further in view of *Matias*. This rejection is respectfully traversed with respect to the amended claims.

Applicants' present inventive concept, as defined by the amended claims, is directed toward a multiple print engine system that provides for a job distributor operable to distribute rasterized images. As set forth in the specification, one aspect of the present invention is that it enables one to operate on an image in the rasterized bit-mapped space. Systems that preceded Applicants' invention were required to send a print file to a printer wherein the printer would then rasterize the image and then print this rasterized image. In some systems, the image was printed "on-the fly" such that it was not necessary to rasterize an entire page. Rather, as the image was being rasterized, it was being output to the marking engine. This allowed the printer to print the document faster rather than wait for an entire image to be processed before it was output and also required less storage, as rasterized images tend to be relatively large. This rasterizing operation is a process dependent operation. Therefore, each time a print job is sent out to a printer, it must be rendered into the bit-mapped space before being printed. If, for example, one had a desire to print five (5) copies of a document on even a single engine, this would require the image to be rasterized five (5) different times as opposed to a single time. When dealing with multiple print engines, it is desirable that certain pages of a single print job be routed to one engine as opposed to another engine. In some jobs, a portion of the job may be sent to one engine due to the capabilities of that engine and some portions of the print job may be sent to other engines. For example, if certain pages were color, they would be routed to a color engine, and black and white pages might be routed to a black and white engine. Further, there are some pages that have relatively low resolution that may be sent to an even third engine.

Applicants' present inventive concept, sets forth that the routing is a function of the parameters of the page and this information is derived from the rasterized images as oppose to the original print job. Therefore, once the rasterized image is stored, it is stored in association with information about the page such that all that is required for the job distributor is to examine the rasterized image and then determine how to rout that image.

The Examiner has utilized *Barry et al.* reference, U. S. No. 5,596,416 as disclosing the job distributor aspect of the claims in that the Examiner has set forth that *Barry, et al* discloses "a job distributor (30) for receiving multiple page document (Col. 3, Lines 20-25) and providing the rasterized page data for parallel distribution to the inputs of the plural physical print engines (Col. 3, Lines 35-55) according to print job parameters associated with and recovered from the rasterized data (Col. 3, Lines 39-42)." Applicants disagree that *Barry* discloses such. The *Barry* reference sets forth:

The image is provided through an image input device 28 which, for a related printer application, can be a PC , and for a copier application can be a CCD scanner. The image input device 28 is then operable to provide an electrically coded image signal to an image distributor 30, which image can then be stored in an image buffer 32. The image distributor 30 is operable to select and output the image of each page to select ones of the print engines 10 in accordance with a parsing algorithm. (Col. 3, Lines 17-25).

It can be seen that the image is not a rasterized image that is distributed by the image distributor 30; rather, the image distributor first distributes the image and then each marking engine performs the RIP operation. It can be seen from figure 5 and the description associated therewith, the print engine manager (PEM) is operable to contain a RIP, an image buffer and a marking engine. In general, this is a conventional printer. As such, the image distributor is clearly shown in figure 5 as being *before* the RIP operation. Applicants' present inventive concept, as defined by the amended claims, requires the RIP operation to be done before the distribution operation. There is no disclosure set forth in *Barry* wherein information about a page can be associated with a bit-mapped image. Figure 5 discloses only that the unrasterized image and its associated information be transferred to the print engine as a print file. The rasterizing does not have any information regarding the type of engine that

it could be routed to, since it has already been routed to that engine. It is not necessary to provide such information in the RIP operation as only the pixel information that is being transferred to the marking engine is required.

The Examiner indicates that *Barry* does not illustrate the single RIP engine and provides the *Matias* reference for such disclosure. The *Matias* reference does illustrate a RIP with a page memory for storing information. However, it is set forth that the page memory (54) has two planes, one for being output to the printer and the second one for the rendering operation. This is disclosed at Col. 4, Lines 30-38, wherein it is set forth that there will be provided sufficient memory such that all of the information for a given page, be it color or black and white, can be stored in one portion of the memory for transfer to the marking engine and another portion of the memory allows rendering of the next page of data. Therefore, the only disclosure set forth as to storing rasterized pages is that with respect to two pages. There is no disclosure that sets forth that a job is rasterized and stored; rather, it is a continuous streaming operation. Further, *Matias* does not disclose that there is any information stored in the rasterized image that in any way allows the job to be distributed to one engine or the other. In fact, the only disclosure set forth to routing between engines is that associated with Figure 3 and Figure 4. All that is set forth is that there is a multiplexer 18 or a local area network, but there is no disclosure set forth as to how this job distribution is facilitated. There is some information set forth that there might be a secure environment, but there is no disclosure set forth that the routing between one job distributor and multiple engines is based upon information stored in the rasterized image. In fact, it appears that the *Matias* reference is concerned with a fixed connection which, if interrupted, results in destruction of the printers, such that a re-connection is prohibited. Thus, Applicants believe that there is no single RIP operation disclosed wherein the rasterized page is provided for *parallel distribution* to the inputs of selected different ones of a plurality of physical print engines. *Matias* only discloses sending all pages to a single print engine and there is no disclosure set forth that there is any selection of print engines based upon information that is stored in the rasterized image.

Applicants believe that neither *Barry* nor *Matias* for the reasons set forth hereinabove, taken singularly or in combination, render Applicants' present inventive concept, as defined by the

amended claims, unpatentable. Therefore, Applicants respectfully request withdrawal of the 35 U.S.C. 103 rejection with respect to the amended claims.

Claims 5 -9, 11-19, 22 and 25-27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of *Barry et al.* and *Dorfman*. This rejection is respectfully traversed.

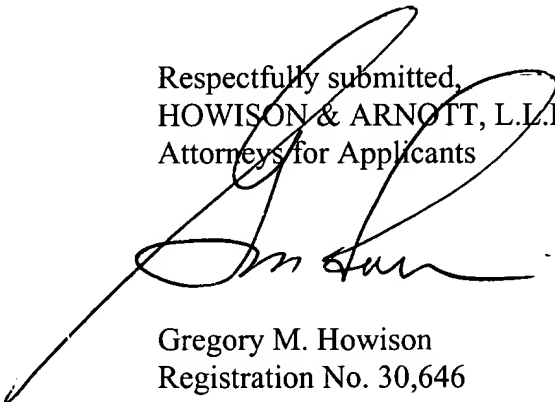
The Examiner has set forth the *Dorfman* reference as disclosing a printing apparatus in which a single RIP engine is disclosed that processes a job for plural print engines wherein the RIP may queue or input the same job to each engine based upon variable data fields that are specific to each engine. Applicants believe that the Examiner is misinterpreting the operation of *Dorfman*. In Figure 1, the prior art description, it seems that the XLC data system (13) is utilized to assemble data that is summed onto an already existing image that is stored in a data storage device (18). Each print engine (17) has a color RIP (16) associated therewith. In Figure 2, the invention set forth in *Dorfman*, there are provided multiple print engines. However, it specifically sets out that the RIP (16) is not illustrated in Figure 2 (Col. 7, Lines 62-64.) Thus, it is not clear whether there is single RIP for each print engine. Further, the operation of *Dorfman* is that images stored in the memory (18) are ripped with the RIP (16) with the addition of certain information thereto provided by the XLC data system (13). This is illustrated in Figure 3. It can be seen that the information that is transferred in this engine specific print image stream is not the rasterized image that is printed but, rather, information that is summed with the rasterized image. All that is rasterized by the XLC data system (13) is fonts and characters (Col. 8, Lines 60-61) Further, the print data stream is utilized for assembling a specific print document for a specific printer. There is no discussion that any information in the stream results in printing to two different printers based upon information associated with a rasterized image such that selection of the printer can be made for routing of the rasterized image thereto. In fact, it does not appear that a rasterized image is stored in the memory (18); rather, it appears that the rasterized image is ripped on the fly as it is created. As such, Applicants believe that the *Dorfman* reference does not cure the deficiencies noted hereinabove with respect to *Barry*. Therefore, Applicants respectfully request withdrawal of the 35 U.S.C. 103(a) rejection with respect to the amended claims.

Neither *Barry, Matias* nor *Dorfman*, taken singularly or in combination, anticipate or obviate Applicants' present inventive concept. Therefore, Applicants respectfully request the allowance of the present claims.

Applicants note with appreciation the Examiner's indication that Claims 14 and 24 would be allowed if amended to incorporate the limitations of all independent and any intervening claims. However, Applicants believe that the independent claims are allowable over the cited art.

Applicants have now made an earnest attempt in order to place this case in condition for allowance. For the reasons stated above, Applicants respectfully request full allowance of the claims as amended. Please charge any additional fees or deficiencies in fees or credit any overpayment to Deposit Account No. 20-0780/TRSY-23,677 of HOWISON & ARNOTT, L.L.P.

Respectfully submitted,
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